

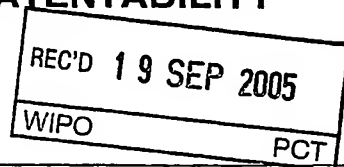
# PATENT COOPERATION TREATY


## PCT

### INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)



|   |  |   |  |  |
|---|--|---|--|--|
| Applicant's or agent's file reference<br>XA1744   |  | <b>FOR FURTHER ACTION</b>   |  | See Form PCT/IPEA/416                        |
| International application No.<br>PCT/GB2004/002690  |  | International filing date (day/month/year)<br>23.06.2004                |  | Priority date (day/month/year)<br>24.06.2003 |
| International Patent Classification (IPC) or national classification and IPC<br>G06F17/50   |  |   |  |  |
| Applicant<br>BAE SYSTEMS PLC  |  |   |  |  |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 7 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input type="checkbox"/> sent to the applicant and to the International Bureau) a total of 3 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (Indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> |  |   |  |  |
| <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input checked="" type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>   |  |   |  |  |
| Date of submission of the demand<br><br>21.04.2005  |  | Date of completion of this report<br><br>19.09.2005                     |  |  |
| Name and mailing address of the international preliminary examining authority:<br> European Patent Office - P.B. 5818 Patentlaan 2<br>NL-2280 HV Rijswijk - Pays Bas<br>Tel. +31 70 340 - 2040 Tx: 31 651 epo nl<br>Fax: +31 70 340 - 3016   |  | Authorized Officer<br><br>Radev, B<br><br>Telephone No. +31 70 340-3682 |  |  |



**INTERNATIONAL PRELIMINARY REPORT  
ON PATENTABILITY**

International application No.  
PCT/GB2004/002690

**Box No. I Basis of the report**

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
  - ☐ publication of the international application (under Rule 12.4)
  - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements\*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

**Description, Pages**

1-30 as originally filed

**Claims, Numbers**

1-14 received on 21.04.2005 with letter of 21.04.2005

**Drawings, Sheets**

1/12-12/12 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☒ The amendments have resulted in the cancellation of:
- ☐ the description, pages
  - ☒ the claims, Nos. 15-54
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing *(specify):*
  - ☐ any table(s) related to sequence listing *(specify):*
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
  - ☐ the claims, Nos.
  - ☐ the drawings, sheets/figs
  - ☐ the sequence listing *(specify):*
  - ☐ any table(s) related to sequence listing *(specify):*

\* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT  
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**Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

|                               |             |      |
|-------------------------------|-------------|------|
| Novelty (N)                   | Yes: Claims | 1-14 |
|                               | No: Claims  |      |
| Inventive step (IS)           | Yes: Claims |      |
|                               | No: Claims  | 1-14 |
| Industrial applicability (IA) | Yes: Claims | 1-14 |
|                               | No: Claims  |      |

2. Citations and explanations (Rule 70.7):

**see separate sheet**

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**Box No. VII Certain defects in the international application**

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The following defects in the form or contents of the international application have been noted:

**see separate sheet**

**Re Item V.**

- 1 The following document is referred to in this communication:

D1 : CONKLIN J ET AL: "glBIS: a hypertext tool for exploratory policy discussion"  
ACM TRANSACTIONS ON OFFICE INFORMATION SYSTEMS USA, vol. 6,  
no. 4, October 1988 (1988-10), pages 303-331, XP002295419 ISSN: 0734-  
2047

2 INDEPENDENT CLAIMS 1, 14

- 2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1, 14 does not involve an inventive step in the sense of Article 33(3) PCT.

Document D1 discloses (the references in parenthesis applying to this document) a design knowledge information capture tool (p. 303, line 12), the tool comprising:  
a storage means suitable for storing design knowledge information (p. 315, line 40). The applicant should note that the features specifying the information to be stored (claim 1 "generated or acquired...and dependencies between said design knowledge") are neither limiting the scope of protection of the claim neither imply any technical features, defining the storage means. In fact the storage means disclosed in D1 are also suitable for storing design knowledge information obtained in various ways, including information generated or acquired during progress of a first design project, wherein the design knowledge information extends beyond product design information and includes information on evolution of a first design project and dependencies between said design knowledge. D1 discloses further that the storage means have a predefined storage structure (p. 307, line 38 "structured fields"), for including a list of issues to be addressed.

As D1 discloses that the information is entered by the user and stored into the database (e.g. p.307, line 38), D1 implicitly discloses an input means for allowing a user to input information into the storage means.

D1 discloses further classification means, operated by the input means (fig. 4, "position", "issue", "external").

D1 discloses also presentation means for presenting a template (p.307, line 38) to the user to allow the information to be input by the user in said predefined knowledge structure (the fields in the database), wherein said presentation means present said structure as an array of nodes (p. 307, line 38 - p. 308, line 2), each node representing an item of said design knowledge, wherein a dependency between items of said design knowledge is represented by a directed link between selected nodes (fig. 2; fig. 3).

The difference between the subject-matter of claim 1 and the teaching of D1 is that in D1 does not disclose that:

- the storage means comprise a plurality of files;
- the classification means selects a file; and
- the template is a file.

Said differences arise from the fact, that in D1 the storage means are implemented as a centralized relational DBMS, while in the current application a file system is used.

A file system, however, is a well-known design alternative to the RDBMS, which the skilled person would choose based on the circumstances without exercising any inventive activity. Such an implementation is even proposed in D1 (section 3.10, "external object ... pathname to a file"). By the straight forward implementation of the storage means as a file system, in order to preserve the functionality of the system the skilled person would automatically arrive at the subject-matter of claim 1 which therefore lacks an inventive step (Article 33(3) PCT).

2.2 A corresponding objection applies to the subject-matter of claim 14 which seek protection for a method carried out by the tool of claim 1 which also lacks an inventive step (Article 33(3) PCT).

### 3 DEPENDENT CLAIMS 2 - 13

Dependent claims 2-13 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in

respect of inventive step (Article 33(3) PCT) for the following reasons:

The additional features of claims 2, 5 - 7 are disclosed in D1.

By implementing the storage means as a file system, the skilled person would arrive at the subject-matter of claims 4, 8 - 10 as a standard design procedure.

The additional features of claims 3, 11 - 13 relate to bidirectional tunnelling links. Although said term is not clear it can be understood in the light of the description. D1 explicitly discloses the usage of hypertext and unidirectional links between nodes. At the priority date, however, the bidirectional traverse of links was inherently supported by plurality of hypertext processing tools (e. g. the "back" button of web browsers). Therefore the skilled person would incorporate said functionality in order to improve the user interface and the visual navigation for complex designs without exercising any inventive activity.

It is further to be noted that the objective problems, defined by the two groups of differences - how to implement the storage means, and how to improve the visual navigation are not interrelated. Therefore introducing the features of claims 3, 11-12 into the subject-matter of claim 1 would not contribute to inventive step.

#### **4 INDUSTRIAL APPLICABILITY**

The invention described in the current application relates to the field of computer aided design. Said invention is industrially applicable in the process of designing complex systems.

#### **Re Item VIII.**

##### **1 OTHER DEFICIENCIES IN THE APPLICATION**

- 1.1 The subject-matter of the claims is not sufficiently disclosed for the invention to be carried out by a person skilled in the art (Article 5 PCT).

**INTERNATIONAL PRELIMINARY  
REPORT ON PATENTABILITY  
(SEPARATE SHEET)**

International application No.

PCT/GB2004/002690

Claim 1 seeks protection for classification means. However the description lacks any teaching for an apparatus automatically performing classification. On the contrary - the so called "classification means" are merely selection means allowing the user to assign different tags to the nodes. In doing so it is the user of the tool who performs the classification by performing a mental act.

CLAIMS

1. A design knowledge information capture tool comprising:  
a storage means for storing design knowledge generated or acquired during progress of a first design project, wherein the design knowledge extends beyond product design information and includes information on evolution of a first design project and dependencies between items of said design knowledge, said storage means comprising a plurality of files, each having a predefined knowledge structure, for including a list of issues to be addressed;  
an input means for allowing a user to input information into the storage means; a design classification means that is operative by said input means to select a said file;  
presentation means for presenting a file template of said file to the user to allow the information to be input by the user in said predefined knowledge structure, wherein said presentation means presents said structure as an array of nodes, each node representing an item of said design knowledge, wherein a dependency between items of said design knowledge is represented by a directed link between selected nodes.
2. A tool according to claim 1 including an interactive graph editor.
3. A tool according to claim 2 wherein said directed link is bidirectional to permit a user to traverse the link in either direction.
4. A tool according to any preceding claim, wherein information input by a user is presented as a label of a node and wherein an item of information stored at the label of the node is linked to a node on said file or a previously input said file where the item of information has previously been raised.
5. A tool as claimed in any preceding claim wherein, in use, a user is prompted by the knowledge structure, to input at least one possible answer to the at least one predefined issue, the at least one possible answer being stored as one of the, or each, piece of information at the



label of the node, and wherein the knowledge structure prompts the user to input at least one argument that supports or refutes the possible answer, the at least one argument being stored as one of the, or each, piece of information at the label of the node.

6. A tool as claimed in claim 5 wherein the at least one argument is classified as a valid, invalid or dominant argument.
7. A tool as claimed in claim 5 or 6 wherein the at least one answer is classified as an open, an accepted or rejected answer.
8. A tool as claimed in claim 3 or 4 wherein the, or each, piece of information stored at the labelled node is supported by at least one text statement.
9. A tool as claimed in any preceding claim wherein each node appears once only said plurality of files.
10. A tool as claimed in any preceding claim wherein a sub-issue to the at least one predefined issue can be identified and input into the storage means, and linked to the predefined file or a previously input file.
11. A tool according to any preceding claim wherein said directed link comprises a tunnelling link that appears to tunnel into a first two-dimensional representation reappear elsewhere, either on the first two-dimensional representation or a second two-dimensional representation.
12. A tool according to claim 11 wherein a first end of the tunnelling link is represented by a first icon and a second end of the tunnelling links is represented by a second icon.
13. A tool according to claim 12 wherein the first and second icons are designed such that double clicking on the first icon causes the tunnelling link to be traversed to the second icon, and double clicking on the second icon causes the tunnelling link to be traversed to the first icon.
14. A method for capturing design knowledge wherein the information extends beyond product design information and includes

Information on evolution of the first design project and dependencies between items of design knowledge, comprising the steps of: storing the knowledge generated or acquired during progress of a first design project in a storage means, said storage means comprising a plurality of files, each having a predefined knowledge structure, for including a list of issues to be addressed;

selecting a said file, and presenting a file template of said file to the user to allow the information to be input by the user in said predefined knowledge structure, said structure being presented as an array of nodes, each node representing an item of said design knowledge, wherein a dependency between items of said design knowledge is represented by a directed link between selected nodes;

and inputting information into said file.